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This application has been carefully reviewed in light of the final Office Action dated December 19, 2006. Claims 1 to 3, 5 to 8 and 10 to 13 are pending in the application. Claims 1, 3, 5 and 11 to 13, all which are independent, have been amended. Reconsideration and further examination are respectfully requested.

In the Office Action, Claims 1 to 3, 5 to 8 and 10 to 13 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,525,888 (Toya) in view of U.S. Patent No. 5,631,677 (Horigome). Reconsideration and withdrawal are respectfully requested.

Claims 1, 5, 11 and 13

Referring specifically to the claims, independent Claim 1 as amended is directed to an electric charging apparatus for charging a secondary battery which is held in the apparatus and being attachable to a printer, the printer being driven by electric power from the secondary battery while the electric charging apparatus is attached to the printer. The apparatus includes a communication unit configured to perform communication with the printer to which the electric charging apparatus is attached, and determination means for determining an electric charging condition for electrically charging the secondary battery. The apparatus also includes control means for controlling electric charging of the secondary battery in accordance with an electric charging control signal for the secondary battery, transmitted via the communication unit from the printer in a case where a print head of the printer is capped, and the electric charging condition determined by the determination means.

Independent Claim 5 as amended is directed to a printer, which an electric charging unit including a secondary battery is attachable to, and which can be operated

with electric power supply from the secondary battery included in the electric charging unit while the electric charging apparatus is attached to the printer. The printer includes a communication unit configured to perform communication with the electric charging unit which is attached to the printer, and transmission control means for transmitting an electric charging control signal indicating that electric charging of the secondary battery is enabled to the electric charging unit via the communication unit, in a case where a print head of the printer is capped.

Independent Claim 11 as amended is directed to an electric charging control method in an electric charging apparatus for charging a secondary battery which is held in the apparatus and being attachable to a printer main body, the printer being driven by electric power from the secondary battery while the electric charging unit is attached to the printer. The method includes a supply step of supplying the electric power from the secondary battery to the printer to which the electric charging unit is attached, and a determination step of determining an electric charging condition for electrically charging the secondary battery. The method also includes a reception step of receiving an electric charging control signal for the secondary battery from the printer, in correspondence with a state of the printer. In addition, the method includes a control step of controlling electric charging of the secondary battery in accordance with the electric charging control signal received in the reception step and the electric charging condition determined in the determination step.

Independent Claim 13 as amended is directed to an electric charging control method of a printer, which an electric charging unit including a secondary battery is attachable to, and which can be operated with electric power supply from the secondary

battery included in the electric charging unit while the electric charging unit is attached to the printer. The method includes a transmission control step of periodically transmitting an electric charging control signal for the secondary battery from the printer to the electric charging unit which is attached to the printer, in a case where a state of the printer is a predetermined state. The method also includes a step of changing a status of the electric charging control signal and transmitting the electric charging control signal whose status is changed to the electric charging unit, in a case where the state of the printer is changed from the predetermined state to another state.

A feature of the invention of Claims 1, 5, 11 and 13 therefore lies in transmitting (or receiving) an electric charging control signal for a secondary battery from a printer, in a case where a print head of the printer is capped (or based on a state of the printer). The applied references of Toya and Horigome are not seen to disclose or suggest at least this feature.

As understood by Applicant, Toya discloses an integrated system of battery charger, battery case and an electronic equipment. See Toya, Abstract. A microcomputer 43 of a battery charger 30 controls charging based on battery temperature and determines battery capacity and voltage based on a current detected by a current detection means. Further, the microcomputer 43 shares battery information such as battery voltage and capacity with a portable telephone 10. See Toya, column 4, line 66 to column 5, line 7. The microcomputer 43 sends battery information such as the remaining battery capacity and voltage to the portable telephone 10. See Toya, column 5, lines 16 to 27.

The Office Action at page 2 directs attention to Toya's microcomputer 43, which as noted above, controls charging based on battery temperature. However, nothing

in Toya is seen to disclose or suggest use of an electric charging control signal for a secondary battery, where the electric charging control signal is transmitted (or received) from a printer. Moreover, Toya is not seen to disclose or suggest that such an electric charging control signal is transmitted (or received) in a case where a print head of the printer is capped (or based on a state of the printer).

In addition, Horigome has been reviewed and is not seen to compensate for the deficiencies of Toya. In particular, Horigome is seen to disclose a printing apparatus driven by a battery. When the battery capacity falls below a predetermined value, control is performed in such a manner that driving intervals of a carriage motor and a conveyance motor will not overlap. When charging of the battery is designated, the battery is discharged using a current load in the apparatus, after which the battery is charged. See Horigome, Abstract.

However, Horigome is not seen to disclose or suggest that an electric charging control signal is transmitted (or received) from a printer, in a case where a print head of the printer is capped (or based on a state of the printer).

As such, even if Toya and Horigome are combined in the manner proposed in the Office Action (assuming for argument's sake that such combination would be permissible), the result would not teach at least the feature of transmitting (or receiving) an electric charging control signal for a secondary battery from a printer, in a case where a print head of the printer is capped (or based on a state of the printer).

In addition, the result would not be seen to disclose or suggest the feature of controlling electric charging of the secondary battery in accordance with the transmitted (or

received) electric charging control signal and a determined electric charging condition, as recited in Claims 1 and 11.

Furthermore, the result would not be seen to disclose or suggest the feature that the electric charging control signal indicates that electric charging of the secondary battery is enabled, as recited in Claim 5.

Moreover, the result would not be seen to disclose or suggest the feature of changing a status of the electric charging control signal in a case where a state of the printer is changed from a predetermined state to another state, as recited in Claim 13.

Allowance of Claims 1, 5, 11 and 13 is therefore respectfully requested.

Claims 3 and 12

Independent Claim 3 as amended is directed to an electric charging apparatus for charging a secondary battery which is held in the apparatus and being attachable to a printer, the printer being driven by electric power from the secondary battery while the electric charging apparatus is attached to the printer. The apparatus includes supply means for supplying the electric power from the secondary battery to the printer to which the electric charging apparatus is attached, and reception means for receiving a signal from the printer. The apparatus also includes charge control means for charging the secondary battery in a case where a condition for electric charging the secondary battery is satisfied, when it is instructed by the signal received by the reception means to turn off the printer. In addition, the apparatus includes control means for stopping electric power supply from the secondary battery to the printer by the supply means, after the electric charging of the secondary battery is completed.

Independent Claim 12 as amended is directed to a method which is seen to generally correspond with Claim 3.

A feature of the invention of Claims 3 and 12 therefore lies in stopping electric power supply from a secondary battery to a printer, after electric charging of the secondary battery is completed. The applied reference of Toya and Horigome are not seen to disclose or suggest at least this feature.

Toya is seen to disclose that a microcomputer controls an on-off state of a charging switch 41, and controls charging based on battery temperature. See Toya, column 4, lines 66 to 67.

Although Toya may be seen to disclose that an on-off state of a charging switch is controlled and that charging is controlled based on battery temperature, Toya is not seen to disclose that after electric charging of a battery is completed, electric power supply from the battery is stopped.

In addition, Horigome has been reviewed and is not seen to compensate for the deficiencies of Toya.

Allowance of Claims 3 and 12 is therefore respectfully requested.

Accordingly, based on the foregoing amendments and remarks, independent Claims 1, 3, 5 and 11 to 13 as amended are believed to be allowable over the applied references.


The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the

invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,


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